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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Timothy Schmidl et al.
Serial No: 09/832,410
Filed: 4/10/2001
Art Unit: 2634
Examiner: T. Wang
Docket No.: TI-30895
Conf. No.: 9531
Customer No.: 23494

CERTIFICATION OF FACSIMILE TRANSMISSION
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FACSIMILE COVER SHEET

X FACSIMILE COVER SHEET (1 SHEET)	___ AMENDMENT _____
___ NEW APPLICATION	___ EOT _____
___ DECLARATION	___ NOTICE OF APPEAL
___ ASSIGNMENT	**X** APPEAL _____ BRIEF (4 Pages)
___ FORMAL DRAWINGS	___ ISSUE FEE
___ INFORMAL DRAWINGS	___ REPLY BRIEF (IN TRIPLICATE)
___ CONTINUATION APP'N	
___ DIVISIONAL APP'N	

NAME OF INVENTOR(S):	RECEIPT DATE & SERIAL NO.:
Timothy Schmidl et al.	**Serial No.: 09/832,410**
TITLE OF INVENTION:	**Filing Date: 4/10/2001**
Wireless Communications	**Conf. No.: 9531**

TI FILE NO.:	DEPOSIT ACCT. NO.:	
TI-30895	20-0668	
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ATTY/SEC'Y: **CHH/gs**		

Texas Instruments Incorporated
PO Box 655474, M/S 3999
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl.No.:	09/832,410	Confirmation No.: 9531
Appellant:	Schmidl et al	
Filed:	April 10, 2001	
TC/AU:	2634	
Examiner:	Wang	

Docket: TI-30895
Cust.No.: 23494

APPELLANTS' BRIEF

Commissioner for Patents
P.O.Box 1450
Alexandria VA 22313-1450

Sir:

The attached sheets contain the Rule 41.37 items of appellants' brief. The Commissioner is hereby authorized to charge the fee for filing a brief in support of the appeal plus any other necessary fees to the deposit account of Texas Instruments Incorporated, account No. 20-0668. A fee transmittal sheet is enclosed.

Respectfully submitted,

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Rule 41.37(c)(1)(i) Real party of interest

Texas Instruments Incorporated owns the application.

Rule 41.37(c)(1)(ii) Related appeals and interferences

There are no related dispositive appeals or interferences.

Rule 41.37(c)(1)(iii) Status of claims

Claims 1-12 are pending in the application with claims 5-6 allowed, claims 7-12 of uncertain status, claim 4 objected to, and claims 1-3 finally rejected. This appeal involves the finally rejected claims 1-3.

Rule 41.37(c)(1)(iv) Status of amendments

There is no amendment after final rejection.

Rule 41.37(c)(1)(v) Summary of claimed subject matter

The invention provides a method of wireless communication for multiple antenna transmitters and multiple antenna receivers with estimation of eigenvector(s) of the matrix of communication channel coefficients between the transmitter antennas and receiver antennas with the relative weightings of baseband signals on the transmitter antennas corresponding to components of the eigenvector(s). Application Fig.1 shows the 2 transmitter antennas and 2 receiver antennas case; and page 4, last paragraph through page 5, second paragraph describes the eigenvector component weighting of the transmission signals.

Rule 41.37(c)(1)(vi) Grounds of rejection to be reviewed on appeal

The grounds of rejection to be reviewed on appeal are:

(1) claim 1 was rejected as anticipated by the Harrison reference.

(2) claims 2-3 were rejected as unpatentable over the Harrison reference in view of the Gerlach reference.

Rule 41.37(c)(1)(vii) Arguments

(1) Claim 1 was rejected as anticipated by Harrison.

Appellants reply that Harrison has only a single antenna for the receiver, see column 5, lines 1-12. In contrast, claim 1 requires transmission over a "channel between a first plurality of antennas and a second plurality of antennas". That is, more than one antenna for the receiver. Consequently, Harrison does not suggest claim 1.

(2) Claims 2-3 were rejected as unpatentable over Harrison in view of Gerlach.

Appellants rely on the patentability of parent claim 1.

Hence, the references do not suggest the rejected claims 1-3.

1. A method of wireless communication, comprising:

(a) estimating at least one eigenvector of a matrix of communication channel coefficients for a channel between a first plurality of antennas and a second plurality of antennas; and

(b) transmitting using said first plurality of antennas with the relative weightings of baseband signals on said first plurality of antennas corresponding to components of said at least one eigenvector.

2. The method of claim 1, wherein:

(c) said communication channel has MN coefficients, α_{ij} for i = 1, ..., M and j = 1, ..., N where M and N are positive integers, and α_{ij} relates to transmission from the ith antenna of a transmitter to the jth antenna of a receiver, and said matrix is CC^H where C is the M x N matrix with ith row and jth column entry α_{ij} and H is Hermitian conjugate.

3. The method of claim 2, wherein:

(d) said signals on said antennas are a superposition of first signals weighted according to a first eigenvector of CC^H plus second signals weighted according to a second eigenvector of CC^H wherein the superposition depends upon first and second eigenvalues of CC^H.

n/a

n/a